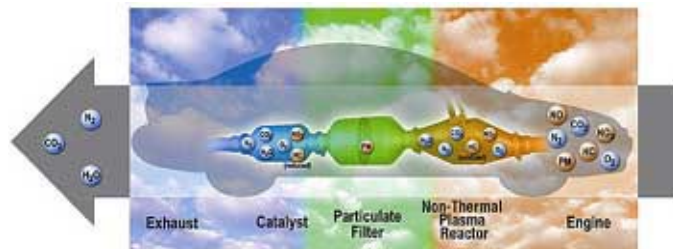


PNNL earns three Excellence in Technology Awards

The Federal Laboratory Consortium recently announced that it is honoring Pacific Northwest National Laboratory with three 2003 Excellence in Technology Transfer Awards for the laboratory's Acoustic Inspection Device, an engine exhaust aftertreatment system and the EMAdvantage emergency management software.

The FLC annually recognizes federal laboratories and their employees who have made significant contributions in transferring important federally funded technology into the private sector. The FLC comprises more than 700 federal laboratories and centers nationwide. A formal ceremony honoring the winning entries will be held May 8 at the FLC's 2003 national meeting in Tucson, Ariz.



One of the three Excellence in Technology Awards that PNNL earned went to an engine exhaust aftertreatment system that substantially reduces harmful vehicle exhaust emissions from diesel and gasoline engines.

Acoustic inspections

On a typical day, the U.S. Customs Service examines 1.3 million passengers and more than 400,000 vehicles, aircraft and ships as it patrols the borders of the United States. To help with this daunting task, the Customs Service now has access to the Acoustic Inspection Device, originally developed by PNNL for inspection of chemical weapon stockpiles in Iraq after the 1991 Gulf War, and for U.S. and Russian chemical weapons bilateral treaty verification.

Acoustic inspection is a non-invasive approach that allows rapid and reliable assessment of the contents of sealed, liquid-filled containers. AID can determine the characteristics of the liquid as well as detect foreign objects, contraband or explosives hidden inside the containers.

AID is a handheld device roughly the size and shape of a large cordless drill. It contains a sensor head, is tethered to a personal digital assistant and is linked to a data library. AID works by transmitting ultrasonic pulses and detecting return echoes to identify the characteristics of container contents.

Emissions reduced

By combining an electrically charged gas with a specialized catalyst, PNNL researchers and industry partners have developed a system that substantially reduces harmful vehicle exhaust emissions from diesel and gasoline engines. These reductions are critical to meeting government-mandated vehicle-emissions and fuel-economy requirements that will take effect toward the end of the decade.

The novel approach converts harmful oxides of nitrogen and particulate matter from vehicle engines into components of clean air. Oxides of nitrogen react with water vapor in the atmosphere to form acid rain and are a precursor to ozone, a major component of smog. Particulate-matter emissions are a source of respiratory irritation and potentially contribute to chronic health effects.

The need for a technology to reduce the toxicity of vehicle emissions is so great the lab successfully transferred the exhaust aftertreatment technology to three organizations — Delphi Corp., Caterpillar, Inc. and the

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PNNL earns three Excellence in Technology Awards, cont.

Low Emissions Partnership of USCAR, a government-industry program that involves Ford Motor Co., DaimlerChrysler and General Motors Corp.

EMAdvantage™

In an emergency, getting accurate information to decision-makers in time to make good decisions can save lives and property. This is true for natural disasters as well as industrial accidents that involve toxic, explosive or other hazardous materials.

EMAdvantage enables decision-makers in an emergency operations center to make informed decisions and share information in real time with the larger emergency-management community, including incident command centers, shelters, schools, hospitals, joint information centers and others involved in emergency planning and response activities.

The system combines modeling, visualization and communications capabilities that enable emergency managers to identify hazards, perform threat and risk analysis, declare emergencies, execute and track responses, register and re-unify evacuees, and make and implement informed protective-action decisions. The software system is based on a PNNL-developed package that was created to safeguard communities near the nation's chemical weapons depots.

For more information on the FLC award-winning technologies, visit <http://www.pnl.gov/news/2003/03-02.htm>. ■